Richer content is driving higher bandwidth requirements in enterprise, data center and cloud networks which results in more stringent traffic classification for proper QoS. Major upgrades and significant expansion in the enterprise workgroup, campus/backbone and data centers around the world are required to support delivery of high-bandwidth content. Testing these new, more complex networks is not as simple as verifying a set of links or device functionality. Comprehensive sets of criteria that test the entire network must be established that take into consideration the network’s new landscape including higher port density, fatter pipes and new sets of protocols that manage virtualized resources. This test criteria must be applied across all elements of the entire network to ensure the required Performance, Availability, Scalability and Security (PASS).

Spirent TestCenter™ provides a wide spectrum of interface types, protocol support, and chassis options to test any size and scale of enterprise or data center network. You can be assured of your network’s capacity and performance so you can better manage your businesses demands.

“Spirent has allows us to demonstrate 40GbE performance with sub 285 nanosecond latency within the GS0072 and also demonstrate the scalability of the Gnodal Fabric vital in delivering data center applications.”

BOB FERNANDER, CEO
Enterprise and Campus Connectivity
Easy-to-use, high-performance benchmarking accelerates testing of enterprise workgroup and campus/backbone solutions. Dozens of test wizards simplify test configuration and execution, while allowing advanced users the control they need.

Cloud Infrastructure and Services
The promise of moving to the cloud is enticing when IT departments see the benefits of centralized storage that is easier to manage and enhanced asset management. The challenge is that these benefits also add significantly to endpoint security risk. Spirent TestCenter™ eliminates the unknowns associated with cloud performance by measuring the environments with precision. It has all the necessary interfaces including 1G/10G Ethernet, 2/4/8 Gbps Fibre Channel and 40/100G Ethernet, as well as fully compatible virtual interface support. It provides an unmatched solution for cloud infrastructure QoS testing.

Data Center Switching
Virtualization is driving change in the way networks are configured and managed. Growth of 10 Gigabit Ethernet (10GbE) rack and blade server connectivity is rapidly evolving. This speed increase and the introduction of Fibre Channel over Ethernet technology (FCoE), make it possible to eliminate up to half of the interfaces connected to each server and cut costs by reducing space, power and cabling. This convergence of technologies requires changes to accommodate the nearly lossless and extremely low latency of storage solutions. The Spirent TestCenter™ patented latency measurement architecture and comprehensive Intelligent Results provide the coverage needed for the latest network advancements.

Trusted Performance
When the enterprise looks for a reliable cloud and data center network infrastructure, services and application test partner, it turns to Spirent. Spirent TestCenter™ has been selected as the test solution of choice for countless public tests and has won numerous industry awards for its capabilities.

Spirent TestCenter™ was awarded Test & Measurement World magazine’s 2012 Test of Time Award for demonstrated excellence in testing. Spirent TestCenter™ is the leading choice for network equipment manufacturers, service providers and enterprises employing the L2-7 IP and Ethernet technologies required to deliver any application over any network and on any device.
Unparalleled Flexibility and Converged Innovation Make Spirent Ideal for Enterprise, Cloud and Data Center Testing

Whether testing network scalability, security, availability or performance, Spirent is a flexible, unified hardware and software platform that is perfect for next generation network and infrastructure testing. Today’s converged IP networks require several significant and complex infrastructure enhancements. Upgrades must be made to increase scale and performance and accommodate migration to cloud and virtual technologies. Security needs to be updated for the new environment while maintaining security across existing legacy networks.

Spirent TestCenter™ provides a fast path forward by enabling equipment manufacturers and carriers to validate today’s all-IP enterprise performance, network QoS and QoE in the lab and across live networks.

The Spirent TestCenter N11U chassis is the next generation in chassis architecture, designed to handle complex multi-protocol scale and cloud virtualization testing needs.

The Spirent Testcenter N4U chassis is the next generation mobile chassis for the new high-density, high-performance test modules. It's designed for complex, multi-protocol scale and cloud virtualization testing needs.

The Spirent TestCenter GUI emphasizes ease of use while offering very powerful capabilities and a high degree of flexibility.

- Designed for today’s secure app-aware mobile, enterprise and carrier networks
- Supports a full range of test cases
- Supports Spirent Avalanche and Spirent Landslide applications.
Multi 10 Gbps security, attack and performance testing for network infrastructures, Web application infrastructures, virtual/cloud infrastructures and Triple Play services.

- 40Gbps line rate support for Spirent TestCenter mX 40G modules
- Provides support for virtual environments, including VMware, KVM, QEMU, Zen and Hyper-V
- Provides multi-protocol support
- Extensive, flexible reporting

- Ideal for network element engineering development, design and test groups requiring physical access to a test port on the workbench
- Ideal for network equipment manufacturers doing burn-in and production line tests requiring low port count and compactness
- Ideal for technical and field marketing groups that need to mirror actual network scenarios and traffic patterns so networks, services and individual network elements can be quickly validated

- Validates virtualized network performance, scalability and security
- Ensures seamless transitions when migrating to a virtualized data center or cloud environment
- Reduces TCO by testing virtualized infrastructure prior to hardware or end-to-end testing with a single integrated system in a hybrid environment
Save Time, Spend Less with Optimized Infrastructure for Enterprise Testing

Spirent out-performs and out-scales the competition making it easier to achieve accurate, reliable testing and deterministic results in less time.

**Benefit From Unrivaled Performance and Scale**

A single unified platform, Spirent TestCenter™ technology is uniquely designed to test security, scalability, and availability from any-to-any point in the infrastructure. It can guarantee all components, including the Ethernet and storage fabrics, workgroup/campus network and virtualized cloud. It delivers on the expectation of high QoS for public, private and hybrid cloud environments.

Combining Cloud Core™ and Intel high performance multi-core processors with the award-winning high-performance, high-density Ethernet test modules and platforms, Spirent TestCenter creates the foundation for testing the new generation enterprise networks. Networks where multi-protocols, multi-platform applications and devices exist across hybrid, virtualized and data center environment.

Spirent TestCenter Cloud Core™ is based on patented technologies designed to add native elastic computing to the Spirent TestCenter Layers 2–7 performance test platform. Cloud Core™ uses parallel processing to optimize testing tasks across all test ports. Test beds built on the Cloud Core™ architecture provide an exceptional combination of scalable performance and realism — ideal for testing the most complex converged IP systems. With Spirent TestCenter™ you can:

- Test cloud infrastructure, mobile performance, and application experience
- Test network and appliance virtualization
- Emulate complex multi-protocol networks from a single port
- Track fault isolation and real-time data mining for millions of results
- Test virtual ports, switches and routers with Spirent TestCenter Virtual

**Spirent dX2 40G/10G dual-speed Ethernet test module**

The Spirent dX2 40G and 10G Ethernet test module series offers high density and flexibility for testing next-generation data center fabrics and switches. With support for Ethernet, VLAN, FCoE, IPv4, IPv6, multicast traffic generation, and full mesh RFC 2544 latency analysis on thousands of ports, the dX2 module is the industry’s highest density and cost-efficient solution for testing switch fabrics and switches.

**Spirent dX2 100 GbE, 40 GbE and 10 GbE tri-speed test module**

The Spirent dX2 100 GbE, 40 GbE and 10 GbE tri-speed test module series offers high density and flexibility for testing next-generation multi-terabit data center fabrics and switches. With support for Ethernet, VLAN, FCoE, IPv4/6, Multicast, and Industry recognized benchmarking tests such as RFC 2544, 2889 and 3918 in full mesh environments across thousands of ports, the dX2 tri-speed module is the industry’s highest density and cost effective testing solution.

**Achieve Accurate, Intelligent, Dynamic Results**

The industry’s most accurate and comprehensive set of real-time results gives you the insight to eliminate customer-found defects. However, a test tool that delivers millions of individual metrics is not enough. Intelligent Results provide data correlation with hierarchical results — bringing important information to the user’s attention and making drill-down analysis simple for transmit and receive statistics.

“Verifying high-speed, high-capacity router performance is not easy. Spirent TestCenter’s high port density and simple GUI provided the results necessary to verify the features and performance of the router.”

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**MR. JIN, SENIOR ENGINEER**
Experience Increased Testing Efficiency

Spirent TestCenter™ built-in automation tools make it easy to maintain a test program that’s efficient and increases product or service speed to market—which is critical in today’s competitive world.

- **Spirent Test Expert** software wizards show you how to test. Test cases guide the user through pre-defined test cases step-by-step. Finalized test cases may then be run immediately from the test environment or saved as a Tcl script for running in an integrated regression environment.

- **Spirent TestCenter API** is a powerful API that enables the test case author to replicate practically any GUI functionality in a user script. Only Spirent TestCenter provides native programmable interfaces in Tcl, Perl, C, Java and Ruby, allowing you to work in the language of your choice.

- **Spirent TestCenter Command Sequencer** is a visual test authoring tool within the Spirent TestCenter GUI. Users can:
  - Emulate dynamic network behavior in test cases without writing a single line of code.
  - Emulate dynamically changing network conditions
  - Author tests representative of events likely to be encountered in real networks
  - Export these visual, automated tests as a script to be executed within any regression test harness

Spirent iTest

iTest is a software solution for test productivity that integrates with Spirent TestCenter™. iTest allows developers and manual testers to more efficiently conduct and document testing for finding and fixing bugs and proving product performance and quality. iTest uses unique and differentiated technologies to capture user actions, orchestrate control of multiple network devices simultaneously, and easily parse and analyze unstructured network device responses. In addition to these time-saving technologies iTest automatically documents all user actions and system device responses significantly reducing manual work. Resulting test cases are portable, maintainable, and shareable and can be used for “lights out” regression testing.

Spirent iTest provides an efficient approach for rapidly creating tests and reproducing issues. Developers, manual testers, and support engineers can:

- Orchestrate system testing with network devices and traffic generators to create an automated system test solution
- Control network devices via iTest sessions, including: CLI, Test Equipment, SNMP, Web, Java Swing, Flash (Flex), web services, VNC, serial port, Tcl, and VMware vSphere
- Utilize advanced analysis and conditional logic for pass/fail criteria and branching
- Automatically generate comprehensive and customizable documentation for every run, providing proof of testing and concise information for bug reports and issue resolution
- Store test cases and test results in customer’s choice of source control management and database systems, including SVN, SQL, HP ALM, and IBM Rational
- Create graphical topologies that provide a single-click connection to any testbed device for setup, teardown, or diagnostic procedures
- iTest topologies can be reserved for specific test case execution and used to remotely change network topologies using Layer 1 and Layer 2 switches

Spirent iTest orchestrates sophisticated system and scenario testing, configuring and managing hundreds of devices simultaneously while providing interactive testing with DUTs.

Spirent OnDEMAND Test Services

Spirent OnDEMAND is a suite of packaged test services designed to detect and mitigate problems before you launch your new enterprise infrastructure, cloud services or applications. Through the use of proven, advanced techniques, a structured testing approach, and full benefit of Spirent’s award-winning Spirent TestCenter™ test equipment, we eliminate risks of poor performance for new or enhanced data centers, converged networks, multi-play solutions and applications, and services.

Spirent OnDEMAND leverages the expertise of the Spirent Professional Services team to provide hands-on assistance to meet all major testing needs. Our test methodology and automation experts are IETF and RFC authors who have developed industry benchmarks and best practices. They assist in defining standards and performance tests for standards bodies and industry forums.

Spirent OnDEMAND has developed two categories of on site packaged test services:

**Data Center Test Packages**

- Data Center Networking
- Collaboration and Applications
- Network Defense (Security)
- Virtualization
- Cloud Computing
- Green Performance

**IT Initiatives Performance Test Package**

- VoIP Assessment
- IPTV Performance
- WAN Optimization
- VPN Scalability and Performance
- DMZ Architecture
- CCTV over IP

OnDEMAND enterprise, cloud and data center performance test services include test equipment rental, scalability and volume testing, endurance and soak testing performance evaluation and tuning, and load and stress testing for vendor device selection.